

energy in blue



Notice de conduite Instruction manual Manuale d'istruzione Betriebsanleitung Instructieboek Manuale de instrucciones Instruksjonbok Käyttöohje

CONTENTS

1. SAFETY INFORMATION

2. GENERAL INFORMATION

3. ENGINE IDENTIFICATION

Identification of main components

4. PREPARATION PRIOR TO RUNNING

5. ENGINE OPERATIONS

- Switching on
- Switching off
- Running in / Servicing under guarantee
- List of guarantee check operations

6. MAINTENANCE

- Draining engine oil
- Replacing oil filter
- Fuel filter replacement
- Nozzle holder replacement
- Flushing cooling system
- Replacing water pump
- Electrical/battery equipment
- Adjusting valve clearance
- Reverse reduction gear
- Recommendations
- Periodic Maintenance schedule
- Technical features
- Recommended onboard equipment

*All information and specifications contained in this manual are based on the technical data in use at the time of publication.

1 – SAFETY INFORMATION

This operating manual was compiled to help you get the most out of your engine and its ancillary equipment. It contains important instructions which should be observed when the engine is running.

It is extremely important that it is read by the user. It should be always kept in the same location as the engine.

SAFETY SYMBOLS

These symbols are used to indicate that a danger exists. They are aimed at drawing your attention to components or operations that could be dangerous for yourself or other persons using the engine. Please read the recommendations they contain carefully. It is highly important that you read the safety instructions and rules before running engine.

Means that an extremely serious danger which could result in death or major disability if the appropriate specific measures are not taken.

A WARNING

Means that a danger exists which could cause injury or death if the appropriate specific measures are not taken

Acts as a reminder that safety measures need to be observed, or draws attention to dangerous actions which could cause personal injury or damage to the vessel or its components.

The user should take all necessary precautions in terms of handling and protection and should seek advice from a sector professional.

Non-respect of the safety instructions could lead to: Bodily danger, a danger of environmental pollution (dangerous substance leaks), danger to equipment that could cause essential engine operation malfunctions.

• FOLLOW ALL SAFETY RECOMMENDATIONS

- Comply with the engine's warning and caution stickers
- Remove the ignition key and close the battery cut-out
- before working on the engine or its ancillary equipment
- Close the engine casing and replace all protective parts before starting the engine
- Always kept the working area around the engine clean and uncluttered
- Keep all inflammable liquids outside the engine compartment

- Never run the engine when under the influence of alcohol or medicines

• WEAR PROTECTIVE CLOTHING

- To avoid bodily injury, keep clear of rotating parts and do not wear loose clothing near the engine when it is running.

- Use safety clothing and equipment, protective goggles, gloves, etc. in accordance with circumstances and when they are required.

• FUELS AND LUBRICANTS

- Switch off the engine before re-fuelling or adding lubrication products

- Do not smoke or use naked flame during re-fuelling
- Wear gloves when looking for a possible leak

- Hot oil can cause burns – let the engine cool before checking the oil level, or changing the oil or oil filter cartridge

- Always use NANNI DIESEL recommended fuels and lubricants

EXHAUST FUME PRECAUTIONS

- Only run the engine away from people and animals in a well ventilated area-a build-up of exhaust fumes can be noxious

PRESSURE

- Never open the cooling system cap or oil filler cap when the engine is running or while it is still hot. Release all pressure in the systems before removing the caps

- Never check for possible pressure leaks with your bare hands – wear gloves – leaks of liquids under pressure can cause serious injuries – in the event of injury due a liquid leak, see a doctor immediately

BATTERY

- An extremely explosive and volatile oxyhydrogen gas mixture is created when the battery is being recharged. Never smoke, take a naked flame or cause a spark near to the battery

- Never short circuit the battery terminals

- The electrolyte in the battery is highly corrosive – wear gloves and safety goggles.

ELECTRICAL WIRING

Disconnect the engine ignition and the battery cutout before working on the electrical equipment
Check the condition of the electrical cables and wiring – short circuits can create a fire hazard

DISPOSAL OF WASTE FLUIDS

- The various fluids used to operate the engine create a health hazard. Make sure you read the instructions shown on each product's packaging.

- Comply with the environmental regulations relating to the disposal of old oil, fuel, cooling liquid, filters and batteries.

2 – GENERAL INFORMATION

Your NANNI DIESEL engine has been carefully researched and manufactured to the highest quality by NANNI INDUSTRIES. It is built in accordance with very precise specifications out of the very finest materials and following strict production procedures. Your NANNI DIESEL engine is a reliable and long term power unit for your vessel.

The installation of your engine in your vessel is highly important in terms of correct power boating and environmental protection.

NANNI INDUSTRY engineers are among the most skilful in the sector. Their experience, knowledge of the sea and mastery of techniques in association with that of engineers from MAN, KUBOTA and TOYOTA guarantees you the best there is in terms of performance/reliability economy.

WARNING: It is imperative that you engine is installed in a Shipyard or by a representative of NANNI INDUSTRIES, and in compliance with the installation instructions.

This operating manual contains all the information required for your engine to operate correctly. Represented in more than 50 countries via its network of agents and retailers, NANNI INDUSTRIES guarantees your plain sailing World-wide. Parts, labour or just advice, everything has been thought out to serve you.

Do not hesitate to contact your nearest NANNI DIE-SEL approved retailer .

We wish you calm seas and fair weather.

Please read this manual carefully before using your engine.

Follow all safety recommendations.

▲ WARNING: Correct operation of your marine engine is dependent on a usage that conforms to the engine's definition and its transmission (type of vessel, speeds and operating conditions.)

3 – ENGINE IDENTIFICATION

It is imperative that the references shown on the plates attached to the engine and reversing gear are quoted in all correspondence, information requests and orders for spare parts.

	[
SERIAL NUMBER	ОтурО
	► NR
SPECIFICATION	CODE

IMPORTANT: Make a note of the engine and transmission serial numbers, and the model type, and keep in a safe place

ENGLISH

IDENTIFICATION DES PRINCIPAUX ORGANES

- 1. Heat exchanger
- 2. Cooling liquid filler hole
- 3. Block drain plug
- 4. Clear water pump
- 5. Sea water pump
- 6. Alternator
- 7. Flexible fastening
- 8. Electrical connector
- 9. Starter
- 10. Oil gauge
- 11. Oil filler hole
- 12. Air filter
- 13. Water injector exhaust elbow
- 14. Anode
- 15. Oil filter
- 16. Oil pressure transmitter
- 17. Reversing gearbox reduction gear
- 18. Injector pump
- 19. Electrical cut-out
- 20. Accelerator
- 21. Air cooler
- 22. Turbo
- 23. Exchanger drain
- 24. Thermostat
- 25. Turbo drain tap
- 26. Condensation drain hole
- 27. Battery minus (-) cable connector
- 28. Air re-heater relay
- 29. Diesel filter and water contamination detector air
- 30. Starter relay
- 31. Hydraulic oil tank (Stern drive version)
- 32. Power steering oil coolant (Stern drive version)
- 33. Neutral safety contact
- 34. Oil drain port

4 - PREPARATION PRIOR TO RUN-NING

When the engine has been installed on board the vessel and prior to removing the protective covers over the various openings, clean the engine's surfaces. These operations should be carried out by a Shipyard or an approved workshop.

GENERAL CHECKS.

See SILVERWAKE® guarantee conditions

- Fill engine and reversing gear with oil

- Fill the exchanger with coolant, degas the turbo volute casing at the highest point

- Check belt tensions

- Check that the various connectors and plugs are tight (water and oil)

- Check electrical spade connectors, battery terminals, cut-out and extension connectors are tight, plus the battery electrolyte levels

- Accelerator control.

- Check that the "accelerator and reversing gear" lever is correctly synchronised (imperative in the case of a single cable level control.) You should have finished de-clutching we you start to accelerate. In the event of electrical controls, refer to the specific controls manual provided.

- Carry out a final check on fixing and a visual check of the marine unit. If necessary, retouch the paintwork on the unit and accessories.

A DANGER :

• Never take a naked flame or cause a spark near to the battery. An extremely explosive and volatile oxyhydrogen gas mixture is created when the battery is being re-charged - Never cause a short circuit.

• Battery electrolyte is highly corrosive: if this acid come into contact with the skin, wash immediately in soapy water – in the event that it splashes into the eyes, rinse abundantly with water and contact a doctor immediately.

- When connecting the battery cable, start with the positive terminal

- When disconnecting the battery cable, start with the negative terminal

▲ WARNING:

- Do not drop fuel or lubricants onto the engine
- The fluids used to operate the engine create are a health hazard.
- Engine oil cold be harmful to the skin- wear gloves

NOTE: Modern diesel engines are high performance units which require high quality fuels and lubricants.

ENGINE AND REVERSING GEARBOX LUBRI-CATION

Engine

Oil pump greasing system, release valve pressure regulation Disposable oil filter cartridge **Transmission** See separate specifications

Engine oil levels

Unscrew the oil filler hole cap located on the rocker cover. Check the oil level using the dipstick. Never fill beyond the maxi level.

NOTE: Oil types and quantities are given in the technical feature table

FUEL SYSTEM

Composition

Disposable main filter cartridge Injector pump High pressure injector pipe Injectors (inside the cylinder head)

Fuel system purge

- Check the fuel level in the tank.

- Open the fuel cock, unscrew the purge screw located on the upper part of the filter and pump the system using the incorporated pump. When no more air bubbles appear, tighten the screw. In the event that the injection system is not fully primed, carry out the following procedure:

- Unscrew the No. 1 injector fuel pipe and turn the engine on the starter until diesel fuel appears. Re-tighten the nut and follow out the same procedure for the other injectors.

- Re-start the engine and check for leaks.

△DANGER: Do not smoke, approach with a naked flame or cause a spark. Wipe up any spilt fuel.

COOLING SYSTEM

This is made up of two different systems: the sealed cooling system and the sea water cooling system.

Sealed cooling system

This is made up of a pump driven by the crankshaft via two V shaped belts, a water temperature heat exchanger, an oil temperature heat exchanger integrated unto the engine block and a thermostat.

Seawater cooling system

This is made up of a pump, a clear - salt water heat exchanger, supercharger air refrigerant, power steering oil refrigerant (version Stern drive), reversing gear oil exchanger and an exhaust elbow.

Coolant

Recommendations for initial start up.

Check that the drain plug located beneath the turbo, open the breather plug on the top of the turbo liner.
Create a diluted 50% antifreeze and 50% clear water antifreeze mixture. The quantity required is given in the table of technical specifications.

Pour the mixture into the filler hole, close the breather plug on the top of the turbo liner when the liquid can be seen and continue filling up to the maximum. Possible top-ups should be made when the engine is cold and only with clear water. Re-start the engine and top-up to correct level. Check for leaks.
Every two years at the beginning of the season, completely drain the cooling system, flush out using clear water and re-fill in accordance with the instructions provided above,. (See SILVERWAKE guarantee terms.)

▲ **DANGER** : Always fill the cooling system when the engine is off and cold – Do not smoke or approach with a naked flame.

- Keep away from revolving parts when the engine is running .

▲ **CAUTION** : Never use undiluted antifreeze. The use of additives and other type of coolant can cause insulating deposits to be formed, and engine overheating.

Hot water connection

You can install an onboard hot water system by connecting from the interior clear water system to the engine (Ask your NANNIDIESEL agent).

▲ **CAUTION:** Before staring the engine, make sure that the sea water inlet is open as it only needs the pump to run dry for several seconds in order to cause deterioration to the water pump rotor. After cleaning the sea water filter, carefully close the cover in order to avoid the water pump sucking in air.

ELECTRICAL EQUIPMENT

Wiring positions /Color / Function

1	Red	(+)12 volt battery
2	Violet	D+ Alternator D+ Terminal
3	Grey	Oil pressure sensor
4	Yellow	Heating unit
5	Pink/Black	Oil pressure switch
6	Yellow/Green	Water temperature switch
7	Brown	Starter
8	Orange/Blue	Water temperature sensor
9	Green	Water temperature indicator probe
10	Red/Yellow	Engine stop solenoid power supply
11	Dark blue	(-) engine speed indicator sensor
12	Dark blue	(+) engine speed indicator sensor
13	Light blue	Water contaminated diesel indicator
14		unused
15	Black	(-) 12 volt battery
16		unused

5. ENGINE OPERATION RUNNING

\triangle DANGER : Make sure that the engine casing is correctly closed and install all the protective items before starting the engine.

- Check the fuel level
- Open the diesel supply tap
- Open the sea water inlet valve
- Check engine and transmission oil levels
- Check the coolant level
- Close the battery isolation switch

▲ **CAUTION:** Turning the key to the contact position when starting-up commences the process of preheating inlet air to the engine which can continue whilst running for approximately 6 minutes. Take care not to let any part of the body come into contact with the air pre-heating zone of the engine. Inlet air pre-heating continues whilst the engine temperature is less than 40°C. - Check warning lights and other functions once the engine has started.

- Stop the engine immediately if the alarm keeps ringing, if the temperature rises abnormally, or if several warning lights stay lit.

▲ CAUTION : Discover and solve the problem before starting the engine!

Check that the seawater is running through the exhaust correctly.

Let the engine idle for 2 to 3 minutes, then subject it to a load straightaway.

If the engine does not start at the first attempt, try again making sure to switch off between each attempt.

IMPORTANT:

In the event of several unsuccessful attempts at starting the engine, look for the reason.

Do not keep on trying as water could be sucked into the engine through the exhaust system!

WARNING: Never switch of the electrical system using the battery cut-out whilst the engine is still running as this could cause damage to the alternator.

IMPORTANT: Do not let the engine idle unnecessarily without load.

STOPPING THE ENGINE

- Move the lever to the idle/neutral position

- Let the engine idle for few seconds so that the temperatures and turbo speed can stabilise.

- Never accelerate the engine before switching off.

- Turn the key to the "O" position (vertical.)

- Switch of the battery isolation switch, close the sea water inlet valve as well as the fuel supply.

IMPORTANT: In the event of the vessel being towed, stop the engine and ensure that the seawater inlet valve is close so that the engine does not accidentally fill up with seawater.

TWIN ENGINE VESSELS:

In the event of running on only one engine, close the sea water inlet of the stopped engine. Do not forget to re-open it before re-starting the engine.

▲ CAUTION : Check the engine and the engine compartment for possible leaks.

RUNNING IN SERVICING UNDER GUARANTEE

Running in

We recommend that for the first 20 hours of running you treat your engine gently and only run it at maximum speed for very short periods. Never race the engine immediately after starting without having let it warm up first.

IMPORTANT : After running, the engine should not be constantly run at its maximum speed but at 200 RPM below its maximum speed.

Servicing under guarantee

All preventive maintenance operations as well as their timescale are given in the: SILVERWAKE. ® Guarantee Booklet

The guarantee is conditional on these servicing operations. They must be carried out by an approved NANNI DIESEL representative

All new engines are guarantee against all component defects in accordance with the terms laid down in the **SILVERWAKE.** ® Guarantee Booklet which is given to the purchaser when the engine is delivered.

6. MAINTENANCE

▲ **DANGER:** To avoid any bodily injury, let the engine cool and close the battery isolation switch before carrying out any work.

Observe safety and environmental protection recommendations

IMPORTANT: These recommendations are vital. Compliance will lengthen your engines operational life and ensure that the conditions necessary for meeting the normal guarantee terms are fulfilled. Do not make any unapproved modifications to the engine.

Damage caused by the use of unlisted or non approved spare parts is not covered under the terms of the guarantee.

All interventions and maintenance work should be carried out by an approved NANNI DIESEL workshop

If the engine is used for a number of hours that is less than the indicators provided, maintenance should be carried out once a year.

In this case, we recommend that maintenance work is carried out before laying up for the winter, the engine will then be protected by new, clean lubrication oil. This does not obviate the wintering operations laid down in the SILVERWAKE guarantee.

Valve clearance adjustment

This work should be carried out by a specialist workshop (calibrated adjustment shims)

Timescale: in accordance with the maintenance table (see values in the table of technical features)

Water pump rotor replacement

- Close the sea water inlet valve
- Remove the water pump cover
- Remove the worn rotor using adjustable pliers
- Clean remaining components.
- Install a new rotor
- Replace the water pump cover using a new seal.
- Open the sea water inlet valve
- Start the engine and check the system for leaks

Electrical equipment

Regularly check alternator belt tension. Tighten the belt between the pulleys (190 Nm using the DENSO checking instrument).

▲ **DANGER** : Stop the engine and turn of the battery isolation switch before doing any work on the electrical system.

Battery

Battery components should be checked once per season.

Electrolyte density should be between 1,270 and 1,285.

The electrolyte level should be regularly checked. The level should be kept at 1cm above the plates. Add distilled water only, if required.

▲ DANGER : Never approach with a naked flame, or check the battery by creating a "spark across the terminals" because it gives off inflammable and explosive gases - battery electrolyte is also highly corrosive.

If this acid come into contact with the skin, wash immediately in soapy water. In the event that it splashes into the eyes, rinse abundantly with water and contact a doctor immediately. Do not create a short circuit.

RECOMMENDATIONS

In order to ensure that the alternator an its incorporated regulator work perfectly, **Never:**

Switch off the battery cut-out when the engine is running (risk of damaging the regulator irrevocably).
Reverse the battery terminals. The terminals are marked + (positive) and – (negative) respectively; the negative is the earth; the cable connectors and the cables themselves should be attached correctly.
Change the load on the circuit whilst the engine is running.

To use several batteries, install a load proportioner. (Ask a NANNIDIESEL representative).

In the event of starting using a back-up battery and jump leads, carry out the following procedure: Ignore the main battery circuit, link the backup battery by connecting to + and - to -. Once the engine is running, disconnect the jump leads and do not switch off the main battery circuit.

You should disconnect the 2 battery cables when:

- you are using a battery charger
- before working on any electrical components
- before carrying out any welding on a steel hull

Flushing the cooling system Clear water system

- Open the filler cap located on the exchanger
- Open the drain plug under the turbo liner
- Unscrew the cross headed screw connector located on the exhaust manifold
- Remove the engine block drain plug located on the thermostat mounting
- Drain the used liquid from the heat exchanger and the engine block
- Fill the clear water system and run the engine for several minutes
- Use the topping up/priming procedure described in the Paragraph on: Sealed cooling system
- Drain the water and re-fill with an antifreeze/clear water mixture
- Fill the cooling system in accordance with the specifications

NOTE : In the event that the hot water system is connected to the engine, drain this completely also and, when refilling take the amount of added mixture into account. Make sure that all air in the system is completely removed when filling.

▲ **WARNING:** The liquid is under pressure. Do not open the cap when the engine is hot. Allow the engine to cool and open the cap carefully.

Sea water system

- Close the sea water inlet valve
- Drain all the sea water inlet piping, the filter, sea water pump, piping, heat exchanger, by undoing their jubilee clips

- Drain the exhaust system as a certain amount of water will remain in the silencer "waterlock".

Cleaning the heat and air temperature exchangers

- Check the exchanger wiring cores.
- Remove the covers.

- Remove the cores and clean them using water and an commercially available none corrosive product. Rinse well.

- Replace the O-rings and reinstall the sub assemblies.

▲ **WARNING:** Corrosive products are hazardous to health. Read all instructions on the packaging carefully.

ENGLISH

Diesel fuel filter replacement

The diesel fuel filter is disposable, the fire retardant envelope and the water contamination sensor should be kept and replaces in their correct positions (the fire retardant envelope should not be in contact with the plastic purge screw.)

- Close the fuel cock
- Unscrew the cartridge from the filter head
- Coat the seal of the new cartridge with clean oil

- Screw the new cartridge onto the filter head and hand tighten by 3⁄4 of a turn (do not use a tool) replace the sensor and the purge screw, check the seal

- Open the fuel cock
- Purge the system, check for leaks.
- Start the engine and check all is working correctly.

▲ CAUTION: - Clean away any spilt fuel.

Observe environmental protection recommendations

Replacing an injector

(Use of the workshop manual is indispensable) Remove:

- The 6 pipe injection harness
- The distribution cover
- Diesel backflow harness

- The complete injector. The seating and seal (SST tool)

- Disassemble the injector

- Replace the complete injector, the O ring and the seating. Replace all diesel backflow harness seals. Tighten the injector and piping to the recommended torque.

- Run the engine and check for fuel leaks.

- Do not try to re-condition an injector, this operation should be carried out by a specialist workshop.

▲ **WARNING:** Do not spray diesel onto your skin– wear gloves.

IMPORTANT: the re-conditioning of injectors should be done by an approved NANNI DIESEL workshop. The injectors should be checked every 400 hours or every 2 years in accordance with the maintenance table and the SILVERWAKE® manual.

Draining the engine sump oil

- The oil is extracted using a pump and preferably a warm engine.

- Pump the oil through the oil dipstick tube until all the oil has been extracted.

- Refill using new oil. (See characteristics in the specifications table)
- Check oil level with the dipstick.
- Never exceed the maximum level.

skin contact. Comply with the environmental protection regulations

▲ WARNING: Hot oil can cause burns – Avoid all

Oil filter replacement

The cartridge is disposable.

- Unscrew the cartridge from the filter head
- Coat the seal of the new cartridge with clean oil
- Screw the new cartridge onto the filter head and
- hand tighten by 3/4 of a turn (do not use a tool)
- Start the engine and check for leaks engine.

- Stop the engine, check the oil level and add oil if required.

▲ WARNING : Hot oil can cause burns – Avoid all skin contact.

Comply with the environmental protection regulations.

Reversing gear

Refer to the detailed instructions in the reversing gear manual enclosed with the operating manual.

Reversing gear mechanical control system

Regularly check the remote controls. The cable travel should be 35mm from one side to the other of neutral (O - A = O - B. The lever should be able to freely travel to its full extent.

Electric control system

Check the connections on the solenoid valves, and the connections on the control units.

Take note of the position of the levers

▲ **DANGER** : To avoid bodily injury, to not run the engine without an air filter.

MAINTENANCE

Periodical Maintenance Table

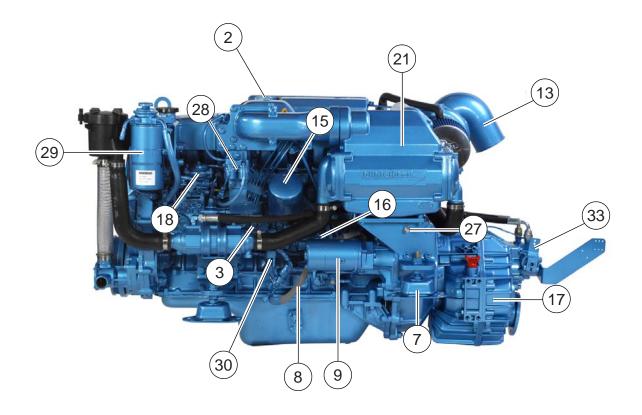
TYPE OF OPERATION	C/R/A Check Replace Adjust	Every day	At 20h	Every 100 h	Every 200h or every year	Every 400 h or every 2 years
Coolant level	C/A	Х	Х		х	
Reversing gear oil level	С	Х	Х		Х	
Motor oil level	С	Х	х		х	
Control panel: indicators and alarms	С	х	Х		х	
Fan belt tension	C/A/R	Х	Х		Х	
Battery electrolyte level	C/A		EVERY	15 DAYS		
Control box: inspection of acc./inv. and trolling cables: General lubrication	C/A		х		х	
Tighten bolts and jubilee clips	C/A		х		Х	
General sealing	C/A		х		Х	
Engine alignment suspended fixings.	C/A		Х		Х	
Heat exchanger adjusted cap	R					х
Coolant	R					х
Thermostat	R					х
Heat exchanger wiring loom: cleaning	С					х
Air heater: cleaning	С					х
Air cooling wiring loom: cleaning	С					х
Sea water filter: cleaning	С	DEPENDING ON CLEANLINESS				
Fuel pre-filter: water purge	C/A	Х	х	Х	Х	х
Fuel filter	R		х		х	х
Engine oil filter	R		х		х	х
Fuel pre-filter (cartridge)	R		х		х	х
Engine oil	R		Х		Х	
Reversing gear oil	R		х			х
Water pump rotor	R				Х	
Injector adjustment	C/A/R					х
Valve clearance	А					500 H→
Cable gland (if braids are present)	С	х	Х		Х	
Air filter, cleaning	С				Х	
Turbo: Inspection/Cleaning	С					Х
Exhaust elbow anode	C/R			X	Х	х
Air coolant: condensation outlet freeing					х	
Notched timing belt	R					х

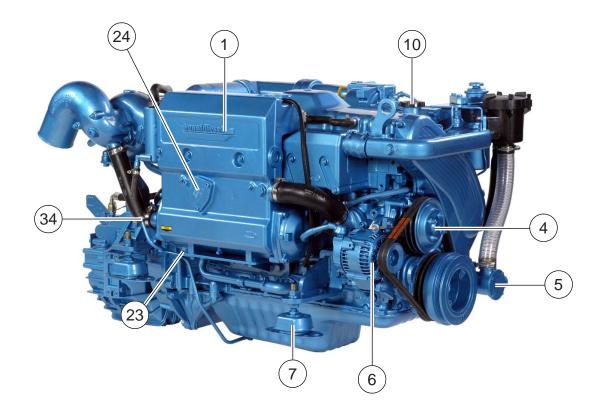
Technical Specifications

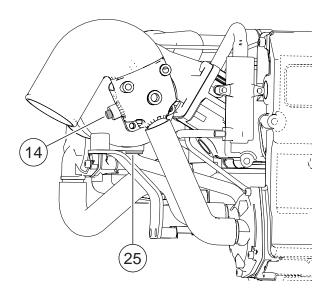
NANNI DIESEL ENGINE	Z6.300	T6.300	6.420 TDI			
Number of cylinders		6 in line				
Max. power*	202.4 kW (275 hp)	224.4 kW (305 hp)	235,6 kW (320 hp)			
Nominal operating conditions*		3600 rpm				
Idling operating conditions		700 + - 25 rpm				
Max. unloaded operating conditions		4200 rpm (+ - 50)				
Cycle		4				
Bore & stroke		94 x 100				
Cylinder size		4.163 cm3				
Distribution	A	AC at head 24 belt valves				
Compression ratio		15,7				
Rotation direction	Anti-cl	Anti-clockwise (engine wheel view)				
Injection order		1-4-2-6-3-5				
Injection pump		DENSO VE				
Injection pressure 01 and 02	17.7 to	17.7 to 18.6 MPa and 34 to 35 MPa				
Fuel consumption	2	216 g/kWh @ 3600 rpm				
Injection feed (before TDC)	1.18	1.18 à 1.24 mm (comparator lift)				
Dry weight		478 kg				
Alternator		12 V - 80A				
Battery capacity (min.)		100/110 A/h				
Cooling circuit	By clear v	By clear water / sea water heat exchange				
Sea water pump		Neoprene rotor type				
Coolant: 50% water + 50 % anti-freeze		27 Litres				
Valve clearance (cold)	In.0.2	In.0.20 (+ - 0.3) Out.0.50 (+ - 0.3)				
Engine oil	API	API CG 4 / SG – SAE 15 W 40				
Engine oil capacity, depending on tilt		11,4 litres				
Reversing gear ZF 63A oil capacity		3,5 L				
Reversing gear ZF 80A oil capacity		5 L				
Reversing gear ZF 80 IV oil capacity		7,5 L				
Oil characteristics		ATF DEXRON II, III				

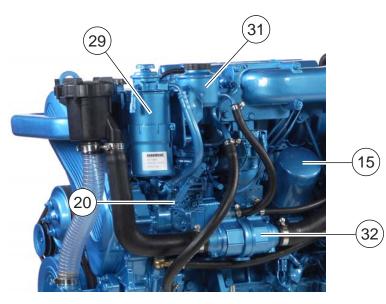
CAUTION: These specifications are designated for pleasure use only. *Recommended cruising speed: 200 rpm below maximum authorised speed.*

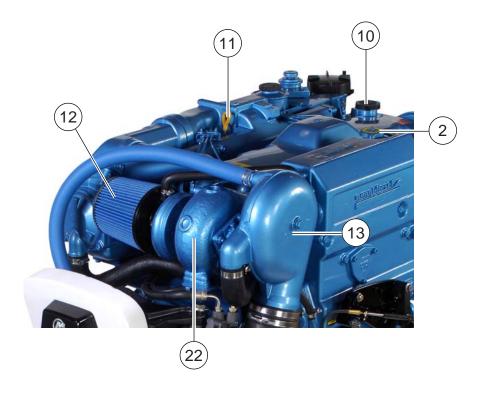
Recommended on-board equipment for engine type 6.420TDI T6 300 Z6 300				
DESCRIPTION	Quantity	Reference		
V-belt	Set of 2	970 312 725		
Engine oil filter	1	970 312 207		
Fuel filter	1	970 311 185		
Seawater pump rotor kit	1	970 312 432		
Diesel return seals	1	970 312 701		
Injector seat	1	970 312 695		
Thermostat	1	970 311 046		
Thermostat seal	1	970 312 796		
Air inlet sleeve seal ('O-ring')	2	970 312 784		
Air exchanger seal	4	970 312 781		
Complete injector holder	1	970 312 692		
Injector seal	1	970 312 694		
Water / water exchanger seal	4	970 312 801		



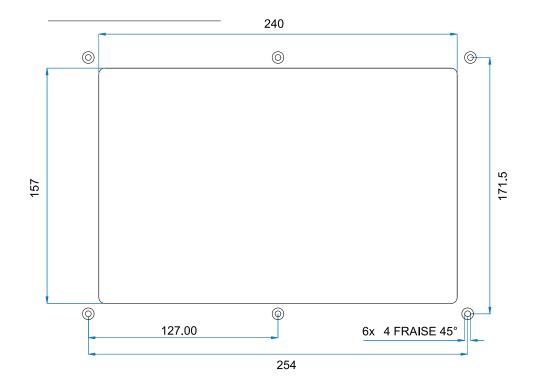


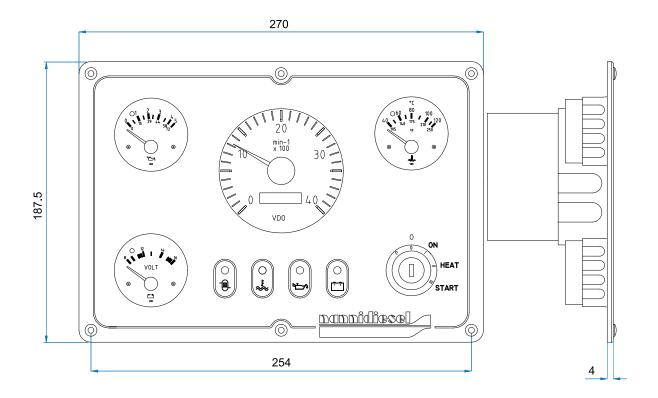




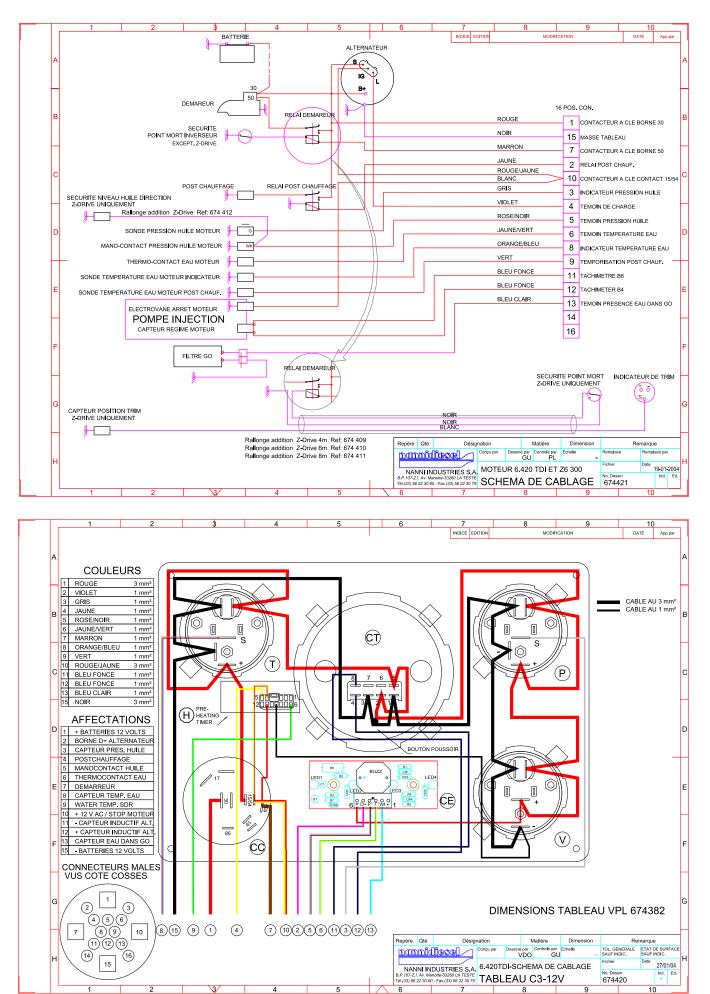


ENGINE CONTROL PANEL : SIZE AND CUT OFF FIGURE





ELECTRICAL SYSTEMS WIRING DIAGRAMS 6.420 TDI, T6 300, Z6 300



Certifié ISO 9001 : 2000



Nanni Industries S.A.S. 11, Avenue Mariotte - Zone Industrielle BP 107-33260 La Teste France - Tel : + 33 (0)5 56 22 30 60 - Fax : +33 (0)5 56 22 30 79 E-mail : contact@nannidiesel.com